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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|------------------------|--------------------------|------------------|
| 10/517,661 | 12/29/2005 | Igor Konyashin | 703430 | 5617 |
| 30008 | 7590 | 08/23/2007 | EXAMINER ZHU, WEIPING | |
| GUDRUN E. HUCKETT DRAUDT SCHUBERTSTR. 15A WUPPERTAL, 42289 GERMANY | | | ART UNIT 1742 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| <i>Office Action Summary</i> | Application No. | Applicant(s) |
|-------------------------------------|------------------------|---------------------|
| | 10/517,661 | KONYASHIN ET AL. |
| Examiner | Art Unit | |
| | Weiping Zhu | 1742 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 08 August 2007.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 30-88 is/are pending in the application.
4a) Of the above claim(s) 52-85, 87 and 88 is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 30-51 and 86 is/are rejected.
7) Claim(s) _____ is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) Notice of Informal Patent Application
6) Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Invention I, claims 30-51 and 86 in the reply filed on June 24, 2007 is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 30-43, 45-49 and 86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinrich et al. (US 5,992,546).

With respect to claim 30, Heinrich et al. ('546) disclose a WC tool comprising by weight 5-19% of binder based on Co or Co and Ni, wherein the binder contains at least 4% of Fe (col. 2, lines 13-21). The content ranges of the binder and Fe overlap the claimed ranges respectively. A *prima facie* case of obviousness exists. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed ranges within the disclosed ranges of Heinrich et al. ('546) with expected success, because Heinrich et al. ('546) disclose the same utilities over the entire disclosed ranges.

With respect to the claimed coercive field strength and magnetic saturation, Heinrich et al. ('546) do not disclose the values of these properties of the WC tool as claimed. However, it has been well held where the claimed and prior art products are

identical or substantially identical in structure or composition, or are produced by identical or substantially identical process, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977), MPEP 2112.01 [R-3] I. In the instant case, the claimed and Heinrich et al. ('546)'s WC tools are identical or substantially identical in structure or composition and are produced by identical or substantially identical processes, therefore a *prima facie* case of obviousness exists. The same values of coercive field strength and magnetic saturation would be expected in the WC tool of Heinrich et al. ('546) as in the claimed WC.

The feature of "for tools for mechanical working of stone, concrete, and asphalt" in the instant claim 30 is interpreted as an intent use and gives no patentable weight to the claim. See MPEP 2111.02 II.

With respect to claims 31-43 and 46, these are limitations of the properties and structures of the WC tool of the instant invention. For the same reasons as stated above, the binder containing the same embedded nanoparticles, the same shape of the WC grains and the same concentration of W in the binder would be expected in the WC tool of Heinrich et al. ('546) as in the claimed WC. See MPEP 2112.01 [R-3] I.

With respect to claim 45, Heinrich et al. ('546) disclose that the Co-Ni-Fe binder comprises a face centered cubic structure (claim 3).

With respect to claims 47-49, Heinrich et al. ('546) disclose that the WC has a grain size of 1-30 microns (col. 2, lines 20-21), which overlaps the claimed ranges. A *prima facie* case of obviousness is established. See MPEP 2144.05 I.

With respect to claim 86, it is a product-by-process claim. Even through product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. Heinrich et al. ('546) disclose a WC tool (col. 2, lines 13-21), which reasonably appear to be either identical with or only slightly different than the respective claimed WC tool in the product-by-process claim. A rejection based on section 103 of the status is eminently fair and acceptable. See MPEP 2113.

2. Claim 44, 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinrich et al. ('546) as applied to claim 30 above in view of Brandrup-Wognsen et al. (US 5,723,177).

With respect to claim 44, Heinrich et al. ('546) do not teach the claimed features. Brandrup-Wognsen et al. ('177) disclose a diamond-impregnated hard material comprising by volume 3-60% of diamond grains with a coating of TiC (abstract and col. 4, lines 27-30).

It would have been obvious to one ordinary skill in the art at the time the invention was made to contain by volume 3-60% of diamond grains with a coating of TiC in the WC tool of Heinrich et al. ('546) as disclosed by Brandrup-Wognsen et al. ('177) in order to improve the wear resistance of the WC tool as disclosed by Brandrup-Wognsen et al. ('177) (col. 2, lines 1-5).

With respect to claims 50 and 51, Heinrich et al. ('546) do not disclose the claimed features. Brandrup-Wognsen et al. ('177) disclose that the hard material comprises TiC, TaC, NbC, VC and Mo₂C (col. 5, lines 14-37). Brandrup-Wognsen et al.

('177) do not disclose the contents of these carbides as claimed. However, it is well held that discovering an optimum value of a result-effective variable involves only routine skill in the art. *In re Boesch*, 617, F.2d 272, 205 USPQ 215 (CCPA 1980). In the instant case, the contents of the carbides to be added are result-effective variables, because they would directly affect the amount of diamond particles to be added (col. 2, lines 1-5), which would in turn affect the wear resistance of the hard material as disclosed by Brandrup-Wognsen et al. ('177) (col. 2, lines 1-5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the contents of the carbides to be added in the WC tools of Heinrich et al. ('546) in view of Brandrup-Wognsen et al. ('177) in order to achieve the desired wear resistance of the WC tool. See MPEP 2144.05 II.

Conclusion

3. This Office action is made non-final. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Weiping Zhu whose telephone number is 571-272-6725. The examiner can normally be reached on 8:30-16:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WZ

8/8/2007

ROY KING
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